



# Computer Science and Electrical Engineering University of Maryland, Baltimore County

UMBC's [CSEE Department](#) is vibrant, research-oriented and multi-disciplinary with programs in Computer Science, Computer Engineering, Electrical Engineering, Cybersecurity and Data Science. Our faculty (35 tenure track, 11 teaching and 17 research) enjoy collaboration, working across our specializations and with colleagues from other UMBC departments and external partners. We have 1650 undergraduate majors, around 500 graduate students and have awarded 312 PhDs since 1986. Our research is supported by a growing and diverse portfolio of government and industrial sponsors with about \$6M in yearly expenditures.

**New faculty.** [Frank Ferraro](#) (PhD '17, JHU) has research interests include human language technology, machine learning and artificial intelligence. [Haibin Zhang](#) (PhD '14, UC Davis, Postdocs at UNC, UConn) works on cloud computing, cryptography, security, privacy and distributed systems. [Dr. Abhijit Dutt](#) is a Professor of Practice who directs and teaches in our new [Data Science Masters](#) program. Susan Mitchel and Michael Neary are new lectures and we have four new visiting faculty: Jennifer Sleeman, Bryan Wilkinson, Nikolaos Baroutis and Jorge Teixeira.

**Research highlights.** Teams led by [Fow-Sen Choa](#) and [Seung-Jun Kim](#) (with Co-PI [Tulay Adali](#)) got two awards from NSF under the Brain Initiative. [Gymama Slaughter](#) is developing a bioreactor to extend the viability of lifesaving human organs as they await transplant with a grant from the Army Medical Research and Materiel Command. [Cynthia Matuszek](#) was awarded an NSF grant to improve human-robot interactions by enabling them to understand the world from natural language. [Alan Sherman](#) received over \$1.5M in additional funding from NSF and the DoD to support cybersecurity scholarships and research on cybersecurity education. Our [Mobile Pervasive and Sensor Systems Laboratory](#) is collaborating with and funded by researchers at ARL to advance human state detection. [CHMPR](#) received over \$1M from NASA to use quantum annealing to study carbon cycles from NASA. As part of the [Cognitive Horizons Network](#), several faculty led by [Anupam Joshi](#) are collaborating with IBM Research on applying AI techniques to automate cyber-security systems, with IBM providing \$1.5 Million in support. Our new  $\pi^2$  Immersive Hybrid Reality Laboratory features a curved wall with a 50 million pixel resolution and a six degree-of-freedom tracking system. Major companies such as GE, Cisco, MITRE, and Northrop Grumman amongst others provided support for faculty research in the past year.

**Faculty awards and honors.** Two faculty received NSF CAREER awards: [Tinoosh Mohsenin](#) to develop energy efficient implementation of deep learning algorithms, and [Ting Zhu](#) to enable IoT devices to conduct accurate, efficient, and scalable NWay sensing. Marie desJardins was recognized by Forbes as one of 21 women who are advancing AI research and was selected for the 2017 A. Richard Newton Educator Award by the Anita Borg Institute.

**Student achievements.** Ph.D. student Kavita Krishnaswamy was named both a Microsoft Fellow and recipient of the Google Lime Scholarship to support her Ph.D. research on developing safe physical human-robot care systems. CyberDawgs, the [UMBC Cyber Defense Team](#) took first place at the 2017 National Collegiate Cyber Defense Competition held in San Antonio.

**Alumni news.** Kami Okusaga (Ph.D. '10) and Josiah Dykstra (Ph.D. '13) received [Presidential Early Career Awards in Science and Engineering](#). Two distinguished CSEE alumni were honored at UMBC's 2017 commencements: [Dr. Ralph Semmel](#) (Ph.D. CS '92), director of the JHU Applied Physics Lab, was the graduate commencement speaker and [Stephanie Hill](#) (B.S. CS '86), Lockheed Martin's senior VP, spoke at the undergraduate commencement. Alumnus [Anubhav Sonthalia's](#) (MS '03) company [Sokrati was acquired by Merkle](#) for reportedly over USD 100M. Alumna Lauren Mazzoli (BS '16 MS '17) was named the UMBC Rising Star Alumna for 2017.

**New academic programs.** We started a new Data Science Professional Masters program in Fall 2017. This joins our Cybersecurity Masters program that now has 135 students. We also created undergraduate and graduate tracks in Cybersecurity and Data Science.

